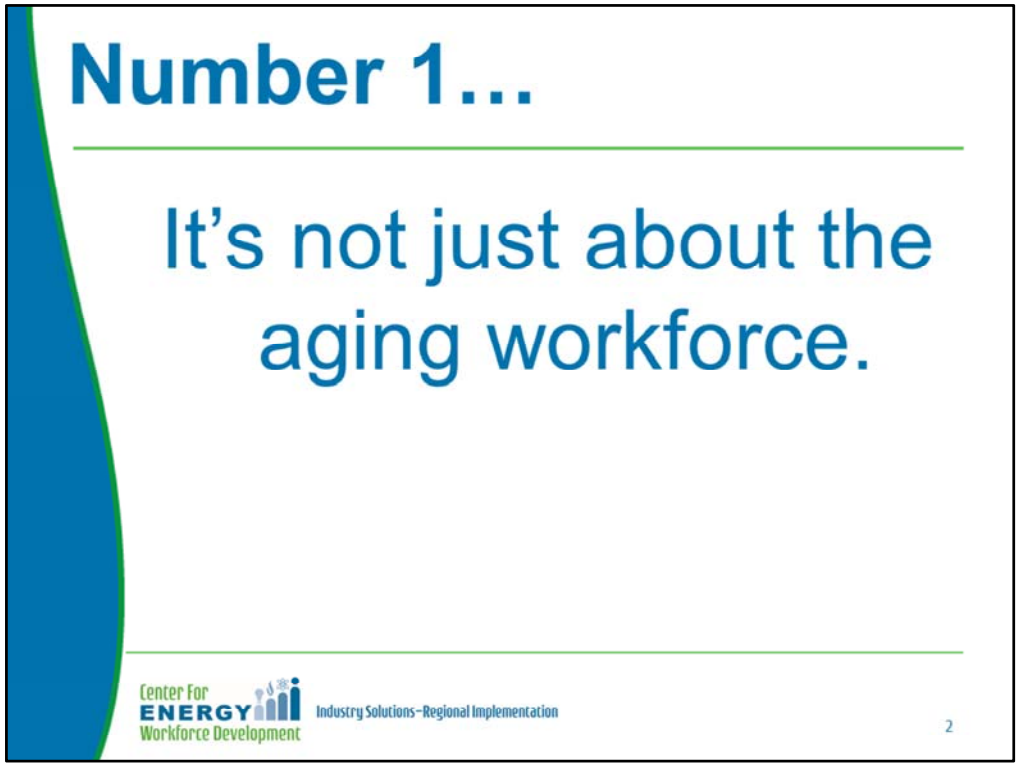
Begin with a quick overview of CEWD and assume most people will not know about CEWD and whether their companies are CEWD members.

- First partnership between utilities and their associations – EEI, AGA, NEI and NRECA to focus solely on workforce issues
- Incorporated as a non-profit in March 2006
- Utilities, associations and supplemental labor contractors join as members
- Partnering with educational institutions, workforce systems, and unions to create mutually beneficial employment solutions
- Currently have over 100 members from large IOU's to smaller cooperatives and municipalities that represent about 90% of employees in Electric and Natural Gas Utilities
- Members are engaged in more than 30 state energy workforce consortia comprising member companies and their education and workforce development partners.

CEWD was formed to develop workforce development tools and processes that meet our members' needs as they work to assure the continuity of their workforce in the skilled job categories of lineworkers, operators, technicians and engineers.

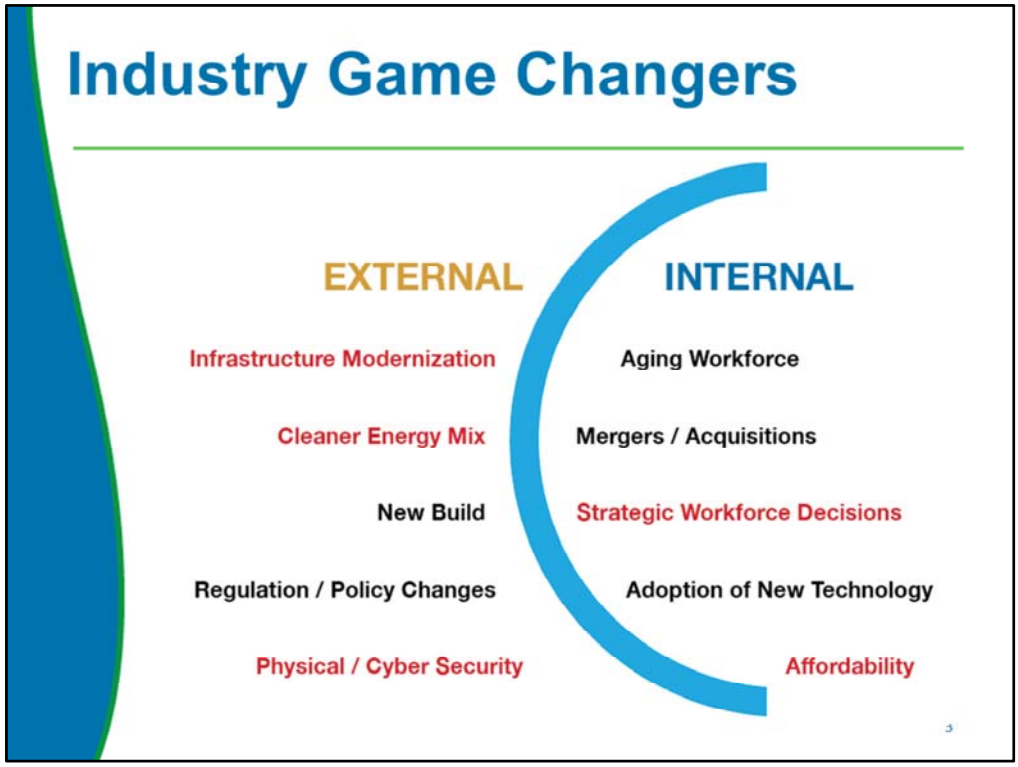
Companies have been actively involved in developing timely and effective solutions, working side-by-side with CEWD staff. One of our most recent significant accomplishments has been the development of a workforce planning template that helps companies with different populations determine where their workforce needs will be and when – and then develop approaches to build career awareness and education pathways for targeted populations.

Today, I want to spend a few minutes boiling a lot of what we do down into five key things you need to know about energy workforce development.



First, it's not only about an aging workforce.

When we talk about the workforce in the energy industry, we hear a great deal about the aging workforce, and while our workforce IS aging –there are other factors that play an equal or greater role in influencing our industry's ability to provide a stable and qualified workforce. The implications of industry game changers are potentially significant. What do we mean by game changers?

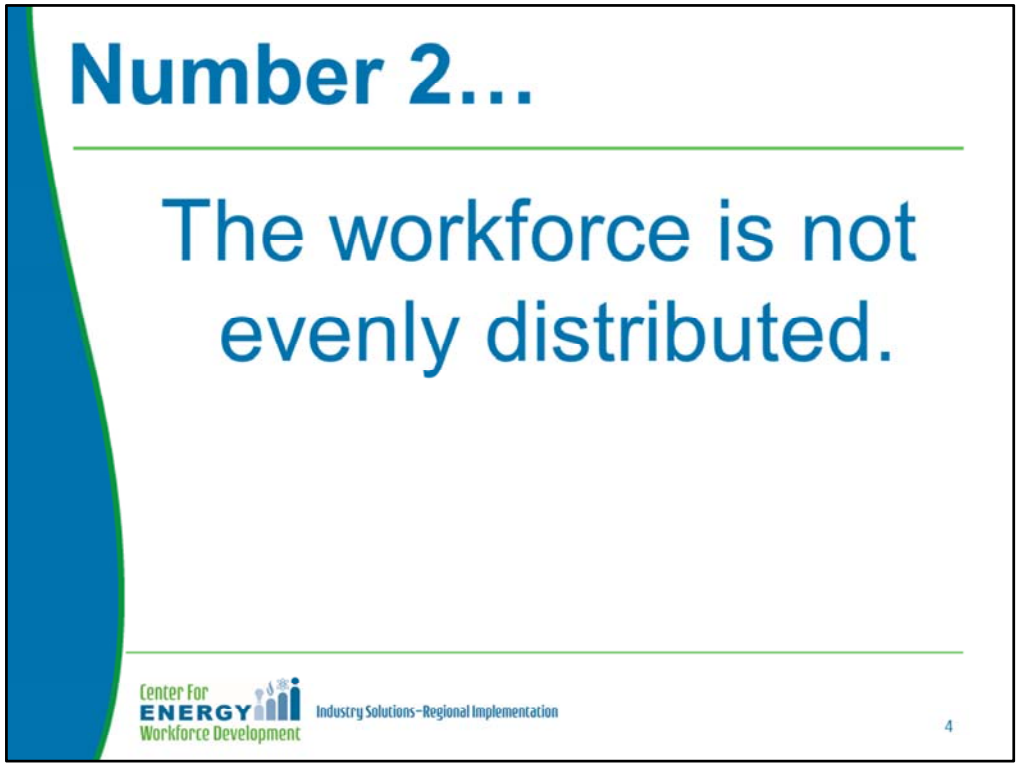


Game changers are external and internal factors that can have significant influence on a company's workforce needs. For example, the change in generation mix and carbon management with the closing of coal plants across the country has set up an internal pipeline of skilled workers who can be reskilled for jobs within their company - jobs that might have previously been filled with new workers graduating from technical schools. That has a ripple effect for the companies and their educational partners.

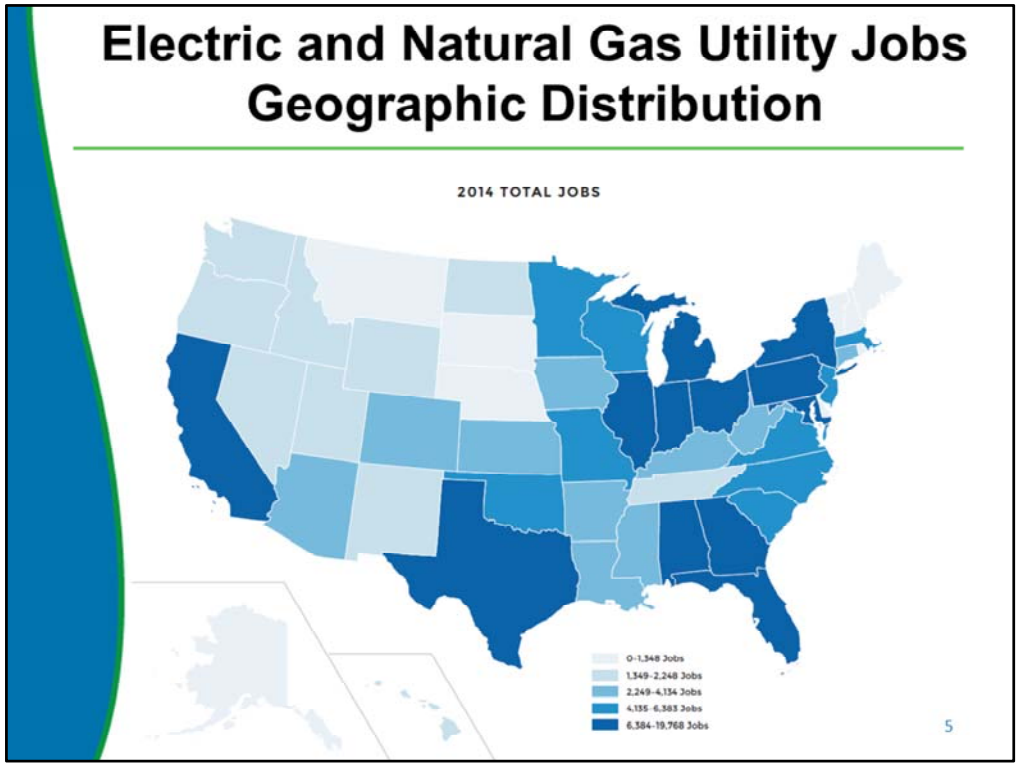
Grid modernization is another example. If you think about the buzz words in the industry, how often do we hear about the impacts of Smart Grid? But in reality, many of the requisite skills needed are similar to reading meters; they may be attaching a new piece of equipment to a pole and learning how to read a new device, but do they need to go back to school or is that something that can be trained for internally in the company?

A potentially significant example of an internal game changer is a merger or an acquisition. Are you going to need the same number of lineworkers when your company merges with another utility? Chances are yes, but there may be workforce implications to other job families, for example, dispatch systems.

So we look at what the workforce implications are of these game changers as well as ones that are unique to our members. With one or more in play, will it increase, decrease, or keep your workforce requirements about the same? Will current workers need new skills or will their current skills transfer? If they need new skills, where will they get them? The whole point of all of this is before you start setting up programs, take the time to understand what's happening in your state and your company, whatever it happens to be. Frequently, we're focusing on game changers at the state energy workforce consortium level, because it's generally not something that impacts only one company. Change in state policy or federal regulation likely affects multiples companies.

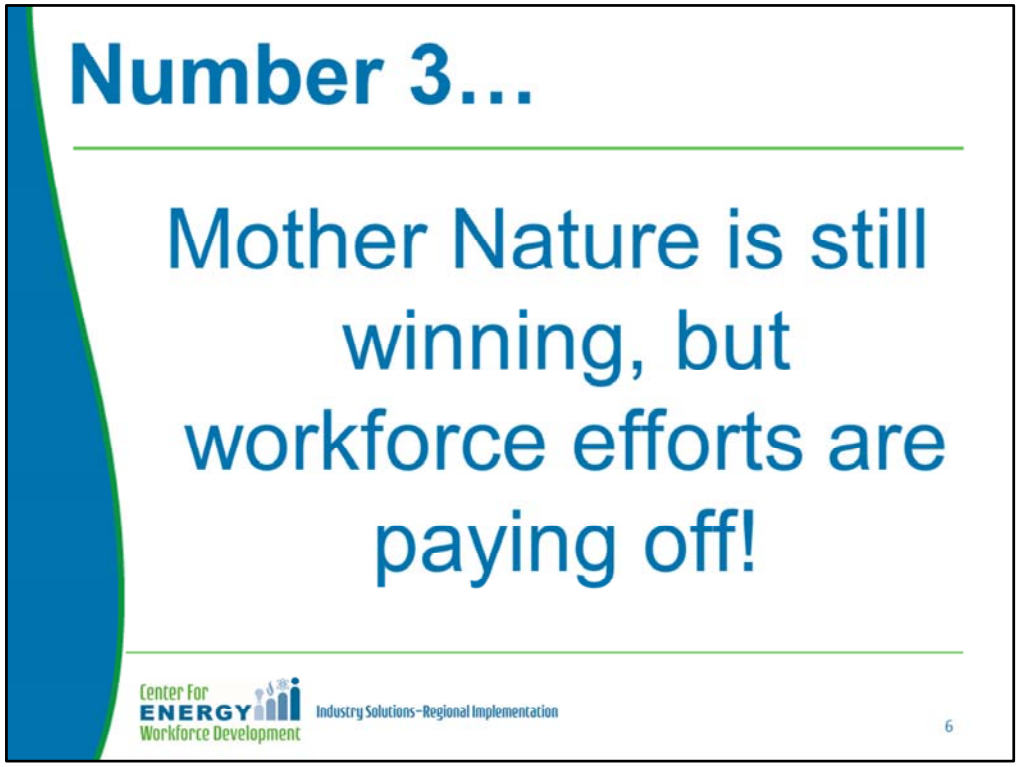


The second thing you need to understand about energy workforce development is that the workforce isn't evenly distributed.

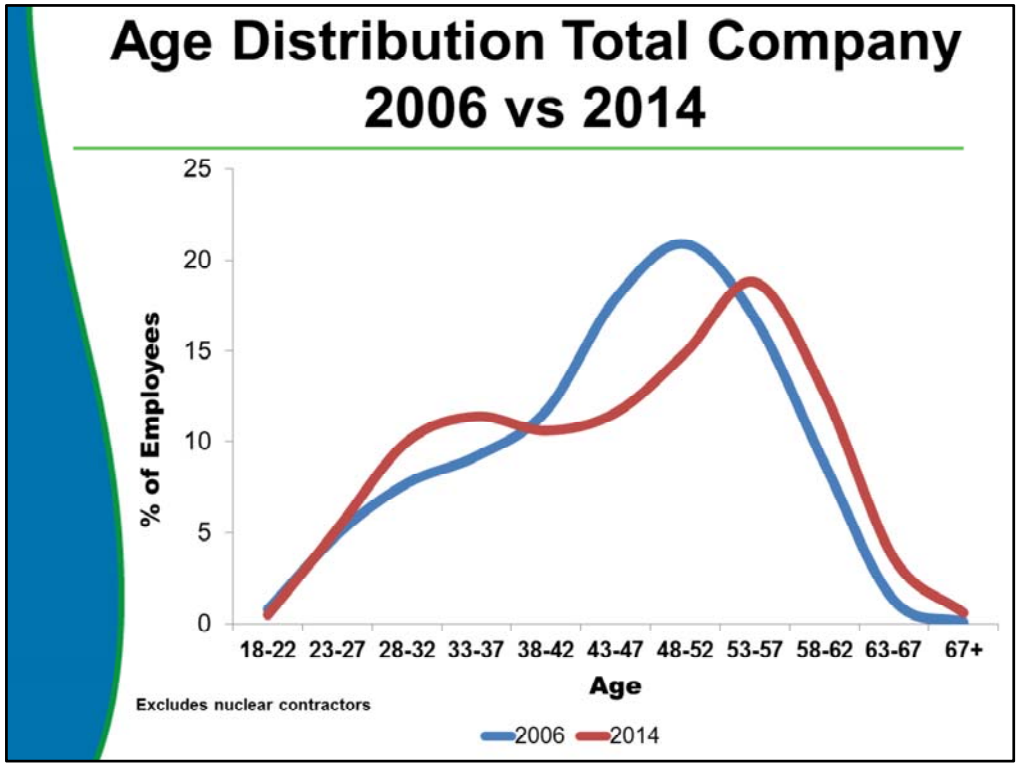


This includes all utility jobs, not just key jobs.

A handful of states have half of the total number of skilled technician and engineering jobs. The states in the darker shades employ half of all of the lineworkers, operators, technicians and engineers needed in this country. The map will look slightly different depending on the predominant types of generation in each state, but it's important to understand how jobs are distributed because it helps you understand your need for education and training – not only the types of training programs but the number of programs as well.



The third thing you need to know is that, while today's workers are continuing to age, our workforce development efforts are paying off.



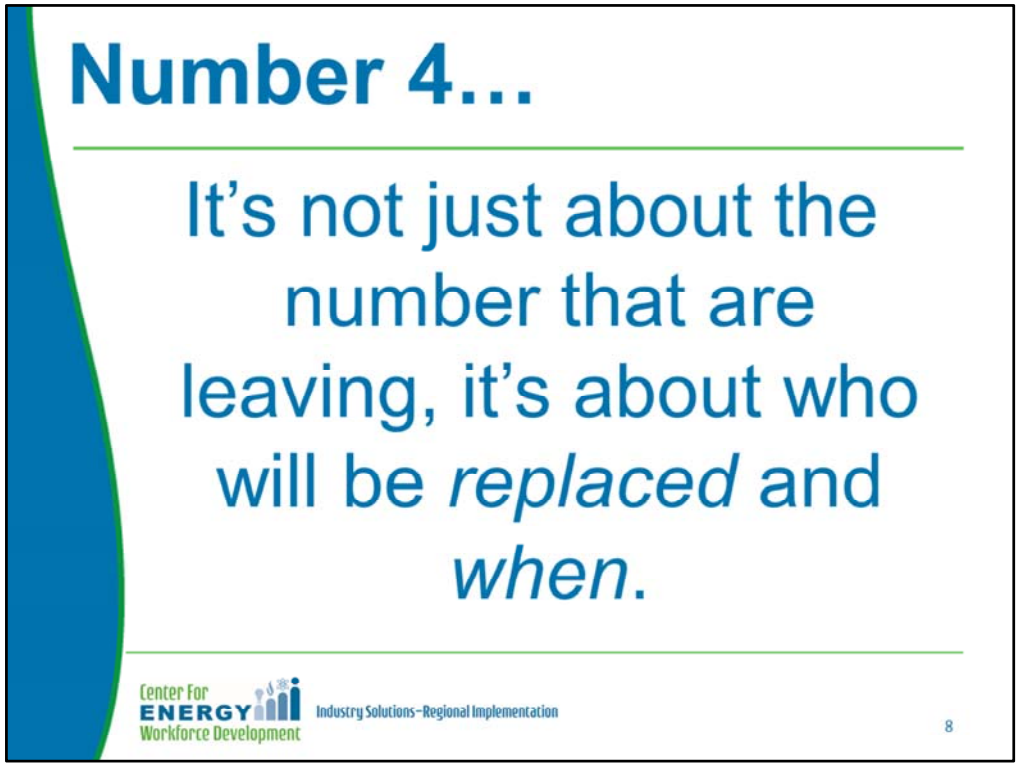
Percentage of the total employee population is on the Y axis. The age distribution is on the X axis. Blue is data from 2006 versus red, which is data from 2012. The blue curve peaks at a higher percentage, showing that the total number of skilled workers was higher in 2006 than in 2012. There are many reasons for the decline in the workforce, including recession, changes in technology and companies opting to downsize and not replace workers one for one.

Note the difference in the apex of the blue curve versus the red curve and the "taller" hump in red among 28 to 38 year olds. We are bringing more people into the workforce at a younger age. That's what will continue to make a difference in the long-term.

What do you think the best shaped curve would be? Not bell shaped, but more of a plateau, so you never have one age group so much bigger than the other. If we want a sustainable workforce, we don't want the double hump, we want it much flatter, which would indicate we're keeping the pipeline steady – that's particularly important when you think about how long it takes to train workers for these highly skilled jobs.

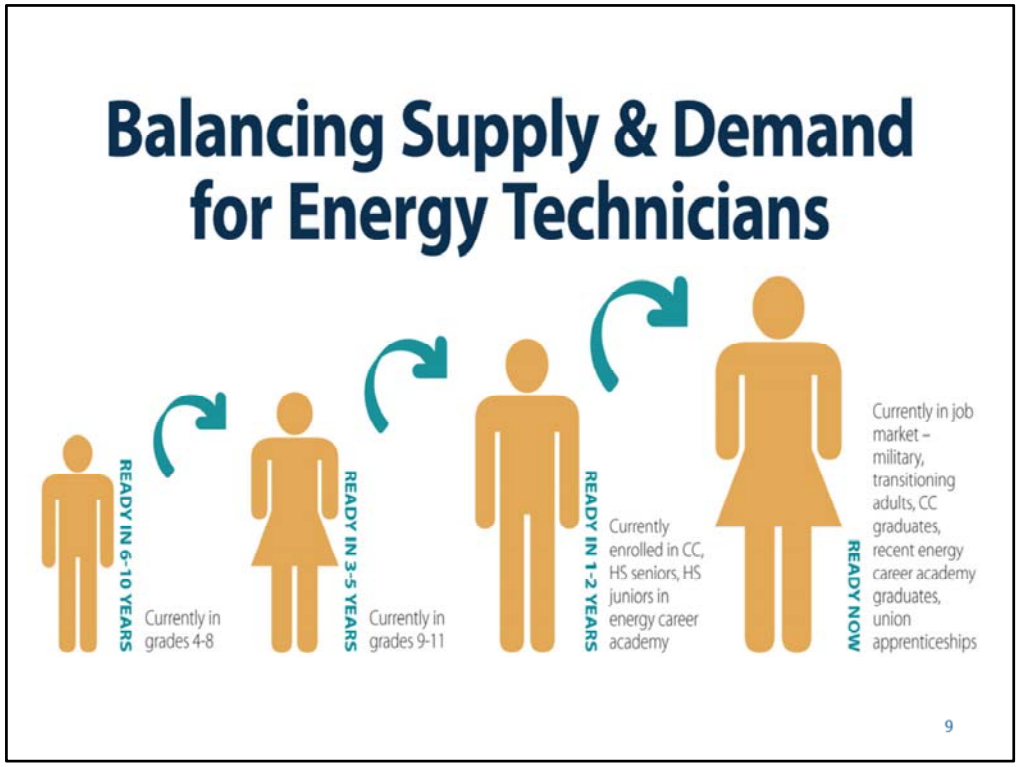
You may be wondering – how was this data collected? It's derived from CEWD's Gaps in the Energy Workforce Pipeline Survey. The survey is conducted every two years with our member companies. The results yield a rich picture of the state the industry's skilled energy workforce, including anticipated retirement attrition and non-retirement attrition. You can find out more about the CEWD workforce survey on our website, www.cewd.org. Our 2015 survey process is underway and it's extremely important that our members participate, so help us make that point in your companies.

Curve is flattening, shows effect of hiring at younger ages and impact of retirements that have already happened. It also demonstrates the need for Mid Career hires.



Refer to the 2013 Survey Executive Summary.

The fourth point I'd like to make is it's not just about the number of people who are leaving the workforce. Determining that we're going to potentially need 10,000 lineworkers by 2023 isn't very helpful unless we know how many of them are going to be replaced and when. One of the benefits of our survey is the ability to pinpoint the distribution of replacements. In terms of recruitment and training, it's also important to realize that, in large part, the people applying for these types of jobs don't want to relocate and follow the jobs, so the implications of developing replacement workers locally is a significant planning issue.

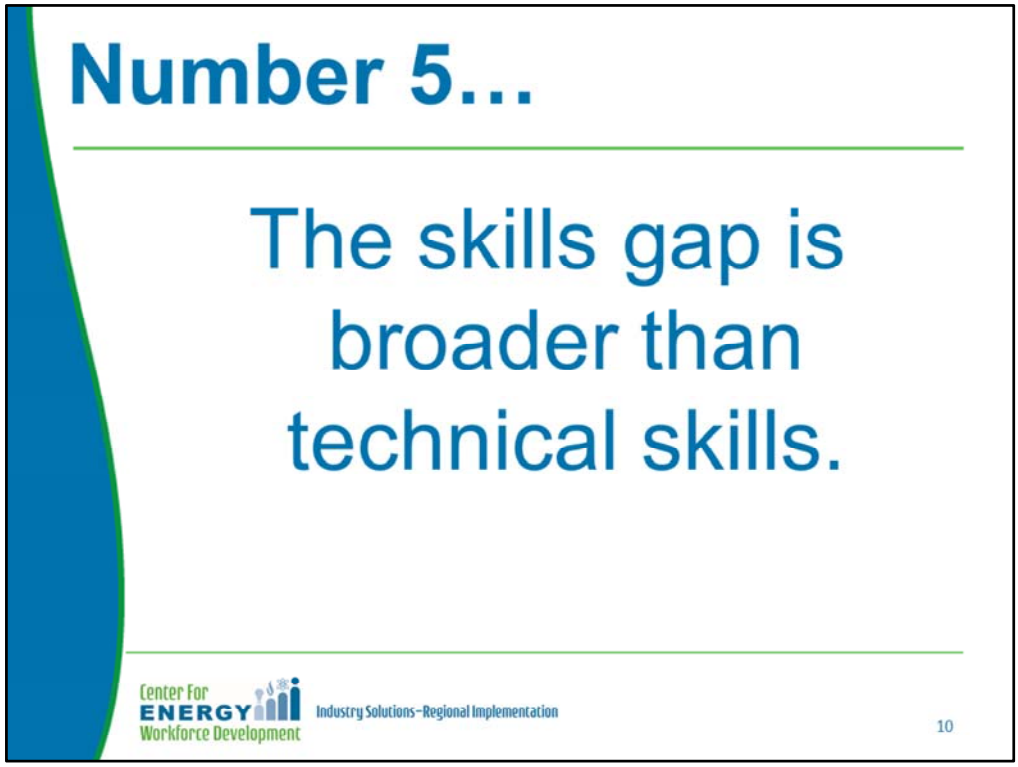


When you are going to need replacement workers is key. Thinking about the curve on slide 7, if you need people to fill vacancies next week, where do you find them? You will try to hire experienced workers or you're going to look at veterans, or possibly transitioning adults.

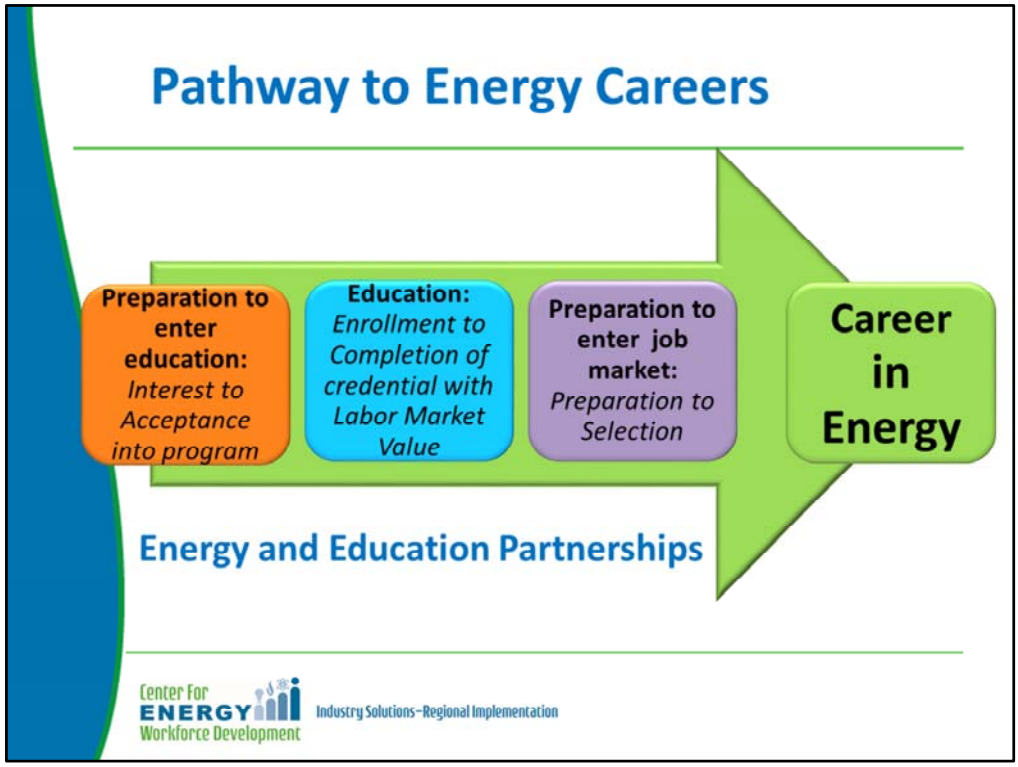
If you can determine how many you need in one of two years, now is the time to look at availability in community colleges, technical schools or STEM and energy focused high school academies. CEWD is just completing a complete inventory of the nation's energy training programs, including those that are sponsored by a utility partner, and the purpose of the inventory is to show on a google map where companies are likely to find skilled graduates and where potential students can find accredited programs that will lead to jobs.

If your workforce needs are 3 to 5 years out, it may be possible to build a program with an educational partner in your area to attract today's 9th – 11th graders in an energy career. And, if you are able to determine your workforce demand in 6 -10 years, you can do meaningful outreach to elementary schools and high schools and nurture and grow a pipeline. Increasing the diversity of our workforce is top of mind with every company we work with, so starting to build awareness with younger populations means you can also build awareness with more diverse populations. Each October CEWD works with state energy consortia to sponsor career awareness events across the country during our annual Careers in Energy Week. Through these events, we build awareness and interest among children and young adults in energy careers. It's sad but true that most teenagers can't tell you the name of the company that supplies their power, let alone how that happens. So 4th graders are not too young to hear about exciting and rewarding jobs in the energy industry.

Just a side note, Ann Randazzo, our executive director, couldn't talk with you today because she is with elementary and high school students at a First Robotics competition in Texas. Children from schools across the South region are demonstrating their robots and CEWD has an industry sponsored "robot doctor" booth branded as Get into Energy, Get into Stem! That's one of many ways CEWD works with its industry members to increase awareness of energy jobs among youth.



The fifth thing you need to know is that the skills gap is broader than technical skills. I'm sure you hear a lot about the skills gap and that it's difficult to hire qualified people into technical jobs. Most of our members cite shortages in the talent pipeline, but the gaps that are causing the shortage are broader than skills. That's why we focus on three phases in the pathway to an energy career.



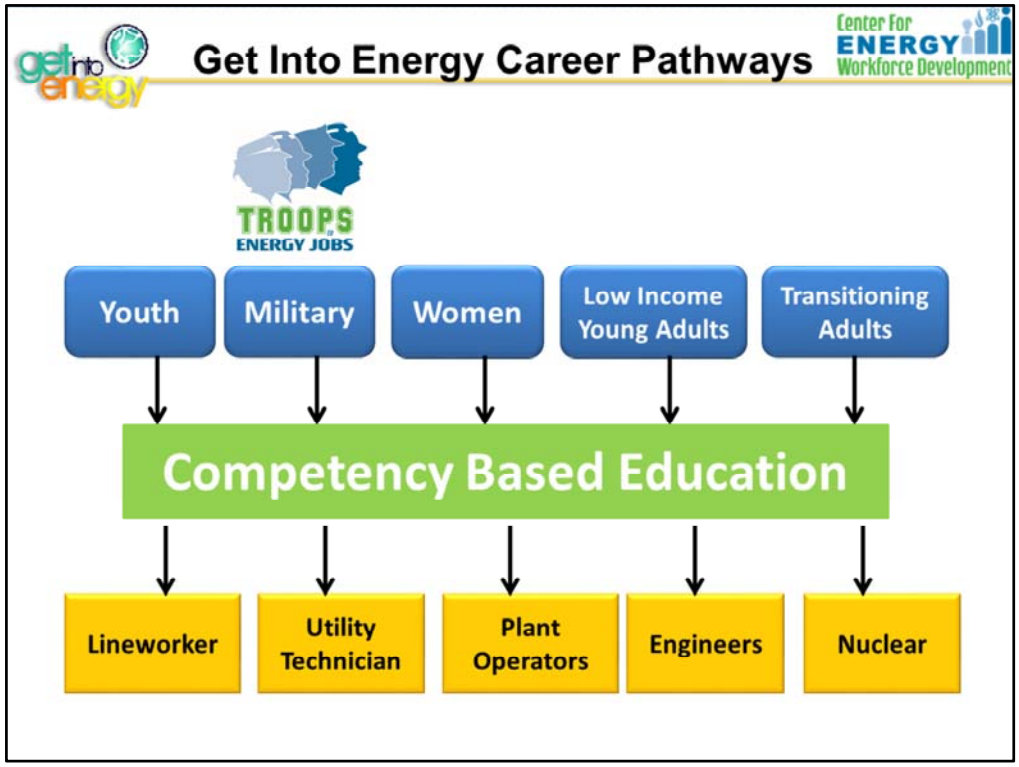
The orange block simply speaks to the need to build interest in energy as a career and helping potential students identify programs and degrees that best suit that interest. We work a great deal with educators too to help them implement stackable credentials and career preparation courses that will lead to success in the labor market. The purple block is where we often see gaps. Students entering the labor market have different needs for support that vary by demographic. That's one of the drivers for developing templates for companies to use in attracting and supporting targeted demographics. CEWD's Troops to Energy Jobs national template lays out the steps veterans, employers and educators can take to help veterans transition to an energy career. We have also developed similar templates for women and for youth. The templates offer a lot of common sense. For example, if you're wanting to recruit line technicians that are earning a certificate in May, you don't set a deadline for hiring decisions in February.

Other examples of tools CEWD has developed to help the transition from education to employment are:

Short term boot camps and certificate programs

Common curriculum based on industry defined competencies

The new Get into Energy Math and Test Prep workshop



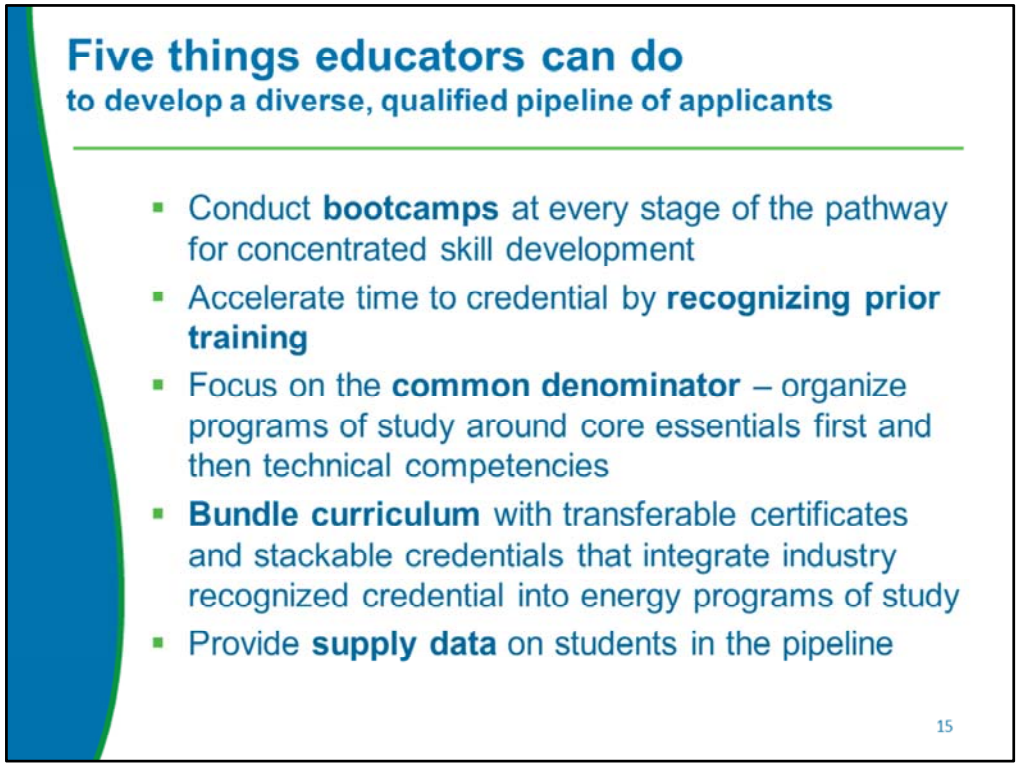
In workforce development, one size does not fit all. It's about the demographics – the way you engage youth is different than the way you work with women, and that's different than the way you attract veterans. Companies want a more diverse pool of candidates for their jobs, but they ultimately will hire the most qualified candidates, so how do we assure that the most qualified are also diverse? It takes educators, workforce development and industry working together to assure diversity at the beginning of the pipeline and qualified, diverse candidates at the end of the pipeline.

I mentioned Troops to Energy Jobs earlier. When you have a moment, please check out troopstoenergyjobs.com.

CEWD member companies can arrange to have their jobs scraped every night and posted to the Jobs microsite. Veterans can search the jobs site and consult with CEWD's virtual career coach.

Another CEWD site is getintoenergy.com, which has lots of information on career awareness targeted on demographics. The CEWD homepage at CEWD.org is a wealth of information as well. You can find the survey results for your company and learn more about your state energy workforce consortium .

So to wrap up quickly, here are five things we think employers can do – should do – to develop a diverse, qualified pipeline of applicants.



And, finally, five things educators can do to support their industry partners in developing the pipeline.